PCT REQUEST

WO 24044

Original (for **SUBMISSION**) - printed on 02.07.1999 03:31:58 PM

0 0-1	**For receiving Office use only** International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4 0-4-1	**Form - PCT/RO/101 PCT Request** Prepared using	PCT-EASY Version 2.84 (updated 01.04.1999)
0-5	**Petition** The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	**Receiving Office (specified by the applicant)**	European Patent Office (EPO) (RO/EP)
0-7	**Applicant's or agent's file reference**	WO 24044
I	**Title of invention**	PROVIDING CONNECTION CONTROL FOR SEPARATE LOGICAL CHANNELS IN H.323 MULTIMEDIA
II II-1 II-2 II-4 II-5 II-6 II-7 II-8 II-9	**Applicant** This person is: Applicant for Name Address: State of nationality State of residence Telephone No. Facsimile No.	 applicant only all designated States except US NOKIA TELECOMMUNICATIONS OY Keilalahdentie 4 FIN-02150 Espoo Finland FI FI +358 9 1807 0 +358 9 1807 496
III-1 III-1-1 III-1-2 III-1-4 III-1-5 III-1-6 III-1-7	**Applicant and/or inventor** This person is: Applicant for Name (LAST, First) Address: State of nationality State of residence	 applicant and inventor US only WALLENIUS, Jukka Keinutie 8 G 41 FIN-00940 Helsinki Finland FI FI

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IV-1	**Agent or common representative; or address for correspondence** The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent
IV-1-1	Name (LAST, First)	TRÖSCH, Hans-Ludwig
IV-1-2	Address:	Tiedtke-Bühling-Kinne et al. Bavariaring 4 D-80336 München Germany
IV-1-3	Telephone No.	+49 89 544690
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IV-1-5	e-mail	postoffice tbk-patent.com
IV-2	**Additional agent(s)**	additional agent(s) with same address as first named agent
IV-2-1	Name(s)	TIEDTKE, Harro; BÜHLING, Gerhard; KINNE, Reinhard; GRAMS, Klaus; LINK, Annette; VOLLNHALS, Aurel; LESON, Thomas, Johannes, Alois; PELLMANN, Hans-Bernd; CHIVAROV, Georgi; GRILL, Matthias; KÜHN, Alexander; OSER, Andreas; BÖCKELEN, Rainer
V	**Designation of States**	
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AP: GH GM KE LS MW SD SZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT
V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AL AM AT AU AZ BA BB BG BR BY CA CH&LI CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW

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V-5	**Precautionary Designation Statement** In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.		
V-6	**Exclusion(s) from precautionary designations**	NONE	
VI	**Priority claim**	NONE	
VII-1	**International Searching Authority Chosen**	European Patent Office (EPO) (ISA/EP)	
VIII	**Check list**	number of sheets	electronic file(s) attached
VIII-1	Request	4	-
VIII-2	Description	13	-
VIII-3	Claims	4	-
VIII-4	Abstract	1	04_abstract.txt
VIII-5	Drawings	1	-
VIII-7	TOTAL	23	
	Accompanying items	paper document(s) attached	electronic file(s) attached
VIII-8	Fee calculation sheet	✓	-
VIII-16	PCT-EASY diskette	-	diskette
VIII-18	**Figure of the drawings which should accompany the abstract**	1	
VIII-19	**Language of filing of the international application**	English	
IX-1	**Signature of applicant or agent**		
IX-1-1	Name (LAST, First)	TRÖSCH, Hans-Ludwig	

FOR RECEIVING OFFICE USE ONLY

10-1	**Date of actual receipt of the purported international application**	
10-2	**Drawings:**	
10-2-1	Received	
10-2-2	Not received	
10-3	**Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application**	
10-4	**Date of timely receipt of the required corrections under PCT Article 11(2)**	
10-5	**International Searching Authority**	ISA/EP
10-6	**Transmittal of search copy delayed until search fee is paid**	

PCT REQUEST

Original (for **SUBMISSION**) - printed on 02.07.1999 03:31:58 PM

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	

TBK

TIEDTKE - BÜHLING - KINNE & PARTNER (GbR)

TBK-Patent POB 20 19 18 80019 München

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Dipl.-Ing. Stefan Klingele
Dipl.-Chem. Stefan Bühling
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An das
Europäische Patentamt

80298 München

PCT Chapter II

September 5, 2001

PCT Patent Application No.: PCT/EP99/04624
NOKIA NETWORKS OY
Our ref.: WO 24044 (F.: 17.9. Eing.)

Reference is made to the Written Opinion of July 17, 2001.

Enclosed new claims 1 to 24 replacing the original claim version are filed, upon which the further prosecution of the application is based.

Moreover, new pages 3 and 4 of a revised specification adapted to the new claim version and supplemented by a short description of document D1 are filed. The new pages replace the original specification pages 3 and 4.

With respect to the new claim version, it is defined in the independent claims that the media components form an H.323 or SIP multimedia stream. In the original application documents, besides H.323 SIP specification and SIP multimedia streams are described, for example on page 2, lines 31 to 36, page 9, lines 19 to 26, etc.

Furthermore, in the new claim 13, the control means are explicitly defined so as to belong to the network system.

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Deutsche Bank München Kto. 286 1060 BLZ 700 700 10
Postbank München Kto. 67043 804 BLZ 700 100 80
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Sanwa Bank Düsseldorf Kto. 500 047 BLZ 301 307 00
//38

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In addition, the new claims 1 to 24 are provided with reference signs as also requested in the present Written Opinion.

However, the Examiner's suggestion on delimiting the subject matter of the independent claims against document D1 has not been followed, since such delimitation would give a distorted picture of the present invention. Document D1 refers to a routing control communication system between a circuit switched network and the Internet. However, document D1 is not concerned with multimedia streams. Therefore, a delimitation of the independent claims against document D1 does not seem to be appropriate.

In view of the above, the requirements as set out in the present Written Opinion are met. Furthermore, since document D1 does not relate to a connection control for separate media components forming an H.323 or SIP multimedia stream, this document cannot disprove novelty and inventive step of the subject matter of the present invention. Therefore, a corresponding indication is respectfully requested.

H.-B. Pellmann
Patentanwalt
TBK-Patent

Enclosures

- New claims 1 to 24 in triplicate
- New specification pages 3 and 4 in triplicate

Enclosure of September 5, 2001

PCT Patent Application No.: PCT/EP99/04624
NOKIA NETWORKS OY
Our ref.: WO 24044

New claims 1 to 24

1.A method for providing a connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points (A-TERM, B-TERM) each located in a network system, comprising the steps of:

monitoring media component control signaling between the end-points;

informing control means (SCF) about separate media components;

recognizing the separate media components associated with a call between the two end-points; and

applying a connection control issued by the control means (SCF) to the separate media components.

2. The method according to claim 1, wherein in the monitoring step call control means ($GATEKEEPER_1$, $GATEKEEPER_2$) receive a media component control signaling message.

3. The method according to claim 1, wherein the informing step includes the steps of:

sending a message to the control means; and

waiting for a response from the control means.

4. The method according to claim 1, wherein the informing step includes the steps of:

sending a message to the control means;

waiting for a response from the control means;

receiving a message from the control means; and

sending a modified component control signaling message from call control means ($GATEKEEPER_1$, $GATEKEEPER_2$).

5. The method according to claim 2, wherein in the monitoring step, if the media component control signaling messages are routed via media proxy means (MEDIA $PROXY_1$, MEDIA $PROXY_2$), the call control means request report of media component related events from the media proxy means, and the media proxy means inform the call control means of the media component related events.

6. The method according to claim 1, wherein the multimedia stream is routed via media proxy means (MEDIA $PROXY_1$, MEDIA $PROXY_2$) communicating with call control means ($GATEKEEPER_1$, $GATEKEEPER_2$).

7. The method according to claim 1, wherein the informing step includes the steps of:

sending a message from call control means ($GATEKEEPER_1$, $GATEKEEPER_2$) to the control means; and

waiting for a response from the control means to the call control means.

8. The method according to claim 2, wherein the media component control signaling message describes opening, closing or modifying a media component.

9. The method according to claim 2, wherein the media component control signaling message is in association with a call signaling message.

10. The method according to claim 6, wherein the media components associated with a call are recognized in the media proxy.

11. The method according to claim 10, further comprising a connection control step including the steps of:

issuing connection control requests from the control means to the call control means;

issuing connection control requests from the call control means to the media proxy means; and

switching the media components by the media proxy means in accordance with the connection control requests.

12. The method according to claim 11, wherein the switching step involves media proxy switching IP packet payloads carrying a media component between an incoming and outgoing packet stream.

13. A network system for providing a connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points (A-TERM, B-TERM), comprising:

control means (SCF); and

routing means ($GATEKEEPER_1$, $GATEKEEPER_2$, $MEDIA\ PROXY_1$, $MEDIA\ PROXY_2$) for monitoring media component control signaling between the end-points, informing the control means (SCF) about separate media components, recognizing the separate media components associated with a call between the two end-points, and applying a connection control issued by the control means to the separate media components.

14. The network system according to claim 13, wherein the routing means which comprise call control means ($GATEKEEPER_1$, $GATEKEEPER_2$) and media proxy means ($MEDIA\ PROXY_1$, $MEDIA\ PROXY_2$) receive a media component control signaling message.

15. The network system according to claim 13, wherein the routing means send a message to the control means and wait for a response from the control means.

16. The network system according to claim 13, wherein the routing means send a message to the control means, wait for a response from the control means, receive a message from the control means and send a modified component control signaling message from call control means ($GATEKEEPER_1$, $GATEKEEPER_2$).

17. The network system according to claim 14, wherein, if the media component control signaling messages are routed via the media proxy means, the call control means request report of media component related events from the media proxy means and the media proxy means informing the call control means of the media component related events.

18. The network system according to claim 13, wherein the multimedia stream is routed via media proxy means (MEDIA $PROXY_1$, MEDIA $PROXY_2$) communicating with call control means ($GATEKEEPER_1$, $GATEKEEPER_2$).

19. The network system according to claim 13, wherein the routing means send a message from call control means ($GATEKEEPER_1$, $GATEKEEPER_2$) to the control means and wait for a response from the control means to the call control means.

20. The network system according to claim 14, wherein the media component control signaling message describes opening, closing or modifying a media component.

21. The network system according to claim 14, wherein the media component control signaling message is in association with a call signaling message.

22. The network system according to claim 18, wherein the media components associated with a call are recognized in the media proxy.

23. The network system according to claim 22, wherein, for connection control, the control means issue connection control requests to the call control means, the call control means issue connection control requests to the media proxy means and the media proxy means switch the media components in accordance with the connection control requests.

24. The network system according to claim 23, wherein the switching involves media proxy switching IP packet payloads carrying a media component between an incoming and outgoing packet stream.

protocols, the SCP is able to control an entire media stream composed of one component such as G.711 encoded voice, but the separate media components from a multimedia stream are not visible for an SCP.

The media stream may be composed of several media components routed via different paths.

Similarly, the separate media components cannot be connected to external resources separately.

The EP-A-0 909 064 discloses a routing control communication system between a circuit switched network and the Internet. However, this system is not concerned with multimedia streams.

SUMMARY OF THE INVENTION

Therefore, it is an object of the present invention to provide services also for individual multimedia stream components.

According to a first aspect of the present invention, this object is achieved by a method for providing a connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points each located in a network system, comprising the steps of:

monitoring media component control signaling between the end-points;

informing control means about separate media components;

recognizing the separate media components associated with a call between the two end-points; and

applying a connection control issued by the control means to the separate media components.

According to a second aspect of the present invention, this object is achieved by a network system for providing a

connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points, comprising:

control means; and

routing means for monitoring media component control signaling between the end-points, informing the control means about separate media components, recognizing the separate media components associated with a call between the two end-points, and applying a connection control issued by the control means to the separate media components.

According to the present invention, the routing means which may comprise call control means and media proxy means receive a media component control signaling message.

Moreover, the routing means may send a message to the control means and wait for a response from the control means. Further, the routing means which may comprise call control means and media proxy means may receive a message from the control means and send a modified component control signaling message from the call control means.

In addition, if the media component control signaling messages are routed via the media proxy means, the call control means may request report of media component related events from the media proxy means and the media proxy means may inform the call control means of the media component related events.

Furthermore, the multimedia stream may be routed via the media proxy means communicating with the call control means.

Moreover, the routing means may send a message from the call control means to the control means and wait for a response from the control means to the call control means. Furthermore, the media component control signaling message may describe opening, closing or modifying a media component.

WO 01/03401
PCT/EP99/04624

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:
TRÖSCH, Hans-Ludwig
Tiedtke-Bühling-Kinne
Bavariaring 4
D-80336 München
ALLEMAGNE

EINGEGANGEN
Patentanwälte
19. Jan. 2001
TIEDTKE · BÜHLING · KINNE
& PARTNER (GbR)

Date of mailing (day/month/year) 11 January 2001 (11.01.01)		
Applicant's or agent's file reference WO 24044	**IMPORTANT NOTICE**	
International application No. PCT/EP99/04624	**International filing date** (day/month/year) 02 July 1999 (02.07.99)	**Priority date** (day/month/year)
Applicant NOKIA NETWORKS OY et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:
   AU,KP,KR,US

   In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:
   AE,AL,AM,AP,AT,AZ,BA,BB,BG,BR,BY,CA,CH,CN,CU,CZ,DE,DK,EA,EE,EP,ES,FI,GB,GD,GE,GH,
   GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MN,MW,MX,NO,NZ,OA,
   PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,UA,UG,UZ,VN,YU,ZA,ZW
   The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on
   11 January 2001 (11.01.01) under No. WO 01/03401

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, **a demand for international preliminary examination** must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the **national phase**, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer
J. Zahra

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

INFORMATION CONCERNING ELECTED OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

To:

LESON, Thomas, Johannes, Alois
Tiedtke-Bühling-Kinne & Partner GbR
TBK-Patent
Bavariaring 4
80336 München
ALLEMAGNE

Date of mailing (day/month/year) 26 March 2001 (26.03.01)	
Applicant's or agent's file reference WO 24044	**IMPORTANT INFORMATION**

International application No.	**International filing date** (day/month/year)	**Priority date** (day/month/year)
PCT/EP99/04624	02 July 1999 (02.07.99)	

Applicant
NOKIA NETWORKS OY et al

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

   AP :GH,GM,KE,LS,MW,SD,SL,SZ,UG,ZW
   EP :AT,BE,CH,CY,DE,DK,ES,FI,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE
   National :AU,BG,CA,CN,CZ,DE,IL,JP,KP,KR,MN,NO,NZ,PL,RO,RU,SE,SK,US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

   EA :AM,AZ,BY,KG,KZ,MD,RU,TJ,TM
   OA :BF,BJ,CF,CG,CI,CM,GA,GN,GW,ML,MR,NE,SN,TD,TG
   National :AE,AL,AM,AT,AZ,BA,BB,BR,BY,CH,CU,DK,EE,ES,FI,GB,GD,GE,GH,GM,HR,
   HU,ID,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MW,MX,PT,SD,SG,SI,SL,
   TJ,TM,TR,TT,UA,UG,UZ,VN,YU,ZA,ZW

3. The applicant is reminded that he must enter the "national phase" **before the expiration of 30 months from the priority date** before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing , if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

   Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

   The entry into the European regional phase is postponed **until 31 months from the priority date** for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:
Claudio Borton

Telephone No. (41-22) 338.83.38

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

To:

TRÖSCH, Hans-Ludwig
Tiedtke-Bühling-Kinne
Bavariaring 4
D-80336 München
ALLEMAGNE

NOTIFICATION OF THE RECORDING OF A CHANGE

(PCT Rule 92bis.1 and Administrative Instructions, Section 422)

Date of mailing (day/month/year) 06 December 1999 (06.12.99)	
Applicant's or agent's file reference WO 24044	**IMPORTANT NOTIFICATION**
International application No. PCT/EP99/04624	**International filing date** (day/month/year) 02 July 1999 (02.07.99)

1. The following indications appeared on record concerning:

[X] the applicant [ ] the inventor [ ] the agent [ ] the common representative

Name and Address	State of Nationality	State of Residence
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	Telephone No.: +358 9 1807 0	
	Facsimile No.: +358 9 1807 496	
	Teleprinter No.:	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

[ ] the person [X] the name [ ] the address [ ] the nationality [ ] the residence

Name and Address	State of Nationality	State of Residence
NOKIA NETWORKS OY Keilalahdentie 4 FIN-02150 Espoo Finland	FI	FI
	Telephone No.: +358 9 1807 0	
	Facsimile No.: +358 9 1807 496	
	Teleprinter No.:	

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

[X] the receiving Office
[X] the International Searching Authority
[ ] the International Preliminary Examining Authority
[ ] the designated Offices concerned
[ ] the elected Offices concerned
[ ] other:

The International Bureau of WIPO **34, chemin des Colombettes** **1211 Geneva 20, Switzerland**	Authorized officer Céline Faust
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

LESON, Thomas, Johannes, Alois
TIEDTKE, BÜHLING, KINNE & PARTNER
GBR
Bavariaring 4
D-80336 München
ALLEMAGNE

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Rule 71.1)

Date of mailing *(day/month/year)*	12.10.2001
Applicant's or agent's file reference WO 24044	**IMPORTANT NOTIFICATION**

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP99/04624	02/07/1999	

Applicant
NOKIA NETWORKS OY et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.

2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.

3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. **REMINDER**

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/	Authorized officer
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Barrio Baranano, A Tel.+49 89 2399-8621

Form PCT/IPEA/416 (July 1992)

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
WO 24044		
International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP99/04624	02/07/1999	
International Patent Classification (IPC) or national classification and IPC H04L29/06		
Applicant NOKIA NETWORKS OY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 7 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations suporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
09/01/2001	12.10.2001
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Cretaine, P Telephone No. +49 89 2399 8828

Form PCT/IPEA/409 (cover sheet) (January 1994)

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP99/04624

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:
Description, pages:

1,2,5-13	as originally filed			
3,4	as received on	05/09/2001	with letter of	05/09/2001

Claims, No.:

1-24	as received on	05/09/2001	with letter of	05/09/2001

Drawings, sheets:

1/1	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   - ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
   - ☐ the language of publication of the international application (under Rule 48.3(b)).
   - ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   - ☐ contained in the international application in written form.
   - ☐ filed together with the international application in computer readable form.
   - ☐ furnished subsequently to this Authority in written form.
   - ☐ furnished subsequently to this Authority in computer readable form.
   - ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
   - ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-24
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-24
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-24
	No:	Claims	

2. Citations and explanations
   see separate sheet

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The invention relates to a method (claim 1) and system (claim 13) for providing a connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points each located in a network.

Prior art:

EP-A-0 909 064 (= D1) discloses a routing control communication system between a circuit switched network with IN equipment and the interworking between a Service Control Point of the IN network and a gatekeeper (H.323) of the Internet is achieved for routing Internet originated calls in the circuit switched network and for providing IN service call forwarding to Internet calls.

Problem:

H.323 and SIP specifications define multimedia conferencing over packet networks, several media components forming a multimedia stream. D1 is however silent about connection control for separate media components (audio, video, data).

Invention:

According to the features of the independent claims 1 and 13, the separate media components associated with an Internet call are identified by monitoring the control signalling between two end-points and connection control is applied to the individual components.

Since none of the cited documents discloses or suggests connection control applied to individual media components, an inventive step is acknowledged for the subject-matter of independent claims 1 (method) and 13 (system).

Claims 2 to 12 and 14 to 24 are dependent claims and as such also meet the requirements of the PCT with respect to novelty and inventive step.

10/018864 EP9904624
JC13 Rec'd PCT/PTO 17 DEC 2001

Enclosure of September 5, 2001

PCT Patent Application No.: PCT/EP99/04624
NOKIA NETWORKS OY
Our ref.: WO 24044

New claims 1 to 24

1.A method for providing a connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points (A-TERM, B-TERM) each located in a network system, comprising the steps of:

monitoring media component control signaling between the end-points;

informing control means (SCF) about separate media components;

recognizing the separate media components associated with a call between the two end-points; and

applying a connection control issued by the control means (SCF) to the separate media components.

2. The method according to claim 1, wherein in the monitoring step call control means ($GATEKEEPER_1$, $GATEKEEPER_2$) receive a media component control signaling message.

3. The method according to claim 1, wherein the informing step includes the steps of:

sending a message to the control means; and

waiting for a response from the control means.

4. The method according to claim 1, wherein the informing step includes the steps of:

sending a message to the control means;

waiting for a response from the control means;

receiving a message from the control means; and

sending a modified component control signaling message from call control means ($GATEKEEPER_1$, $GATEKEEPER_2$).

5. The method according to claim 2, wherein in the monitoring step, if the media component control signaling messages are routed via media proxy means ($MEDIA\ PROXY_1$, $MEDIA\ PROXY_2$), the call control means request report of media component related events from the media proxy means, and the media proxy means inform the call control means of the media component related events.

6. The method according to claim 1, wherein the multimedia stream is routed via media proxy means ($MEDIA\ PROXY_1$, $MEDIA\ PROXY_2$) communicating with call control means ($GATEKEEPER_1$, $GATEKEEPER_2$).

7. The method according to claim 1, wherein the informing step includes the steps of:

sending a message from call control means ($GATEKEEPER_1$, $GATEKEEPER_2$) to the control means; and

waiting for a response from the control means to the call control means.

8. The method according to claim 2, wherein the media component control signaling message describes opening, closing or modifying a media component.

9. The method according to claim 2, wherein the media component control signaling message is in association with a call signaling message.

10. The method according to claim 6, wherein the media components associated with a call are recognized in the media proxy.

11. The method according to claim 10, further comprising a connection control step including the steps of:

issuing connection control requests from the control means to the call control means;

issuing connection control requests from the call control means to the media proxy means; and

switching the media components by the media proxy means in accordance with the connection control requests.

12. The method according to claim 11, wherein the switching step involves media proxy switching IP packet payloads carrying a media component between an incoming and outgoing packet stream.

13. A network system for providing a connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points (A-TERM, B-TERM), comprising:

control means (SCF); and

routing means ($GATEKEEPER_1$, $GATEKEEPER_2$, $MEDIA\ PROXY_1$, $MEDIA\ PROXY_2$) for monitoring media component control signaling between the end-points, informing the control means (SCF) about separate media components, recognizing the separate media components associated with a call between the two end-points, and applying a connection control issued by the control means to the separate media components.

14. The network system according to claim 13, wherein the routing means which comprise call control means ($GATEKEEPER_1$, $GATEKEEPER_2$) and media proxy means ($MEDIA\ PROXY_1$, $MEDIA\ PROXY_2$) receive a media component control signaling message.

15. The network system according to claim 13, wherein the routing means send a message to the control means and wait for a response from the control means.

16. The network system according to claim 13, wherein the routing means send a message to the control means, wait for a response from the control means, receive a message from the control means and send a modified component control signaling message from call control means ($GATEKEEPER_1$, $GATEKEEPER_2$).

17. The network system according to claim 14, wherein, if the media component control signaling messages are routed via the media proxy means, the call control means request report of media component related events from the media proxy means and the media proxy means informing the call control means of the media component related events.

18. The network system according to claim 13, wherein the multimedia stream is routed via media proxy means (MEDIA $PROXY_1$, MEDIA $PROXY_2$) communicating with call control means ($GATEKEEPER_1$, $GATEKEEPER_2$).

19. The network system according to claim 13, wherein the routing means send a message from call control means ($GATEKEEPER_1$, $GATEKEEPER_2$) to the control means and wait for a response from the control means to the call control means.

20. The network system according to claim 14, wherein the media component control signaling message describes opening, closing or modifying a media component.

21. The network system according to claim 14, wherein the media component control signaling message is in association with a call signaling message.

22. The network system according to claim 18, wherein the media components associated with a call are recognized in the media proxy.

23. The network system according to claim 22, wherein, for connection control, the control means issue connection control requests to the call control means, the call control means issue connection control requests to the media proxy means and the media proxy means switch the media components in accordance with the connection control requests.

24. The network system according to claim 23, wherein the switching involves media proxy switching IP packet payloads carrying a media component between an incoming and outgoing packet stream.

protocols, the SCP is able to control an entire media stream composed of one component such as G.711 encoded voice, but the separate media components from a multimedia stream are not visible for an SCP.

The media stream may be composed of several media components routed via different paths.

Similarly, the separate media components cannot be connected to external resources separately.

The EP-A-0 909 064 discloses a routing control communication system between a circuit switched network and the Internet. However, this system is not concerned with multimedia streams.

SUMMARY OF THE INVENTION

Therefore, it is an object of the present invention to provide services also for individual multimedia stream components.

According to a first aspect of the present invention, this object is achieved by a method for providing a connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points each located in a network system, comprising the steps of:

monitoring media component control signaling between the end-points;

informing control means about separate media components;

recognizing the separate media components associated with a call between the two end-points; and

applying a connection control issued by the control means to the separate media components.

According to a second aspect of the present invention, this object is achieved by a network system for providing a

connection control for separate media components forming an H.323 or SIP multimedia stream transferred between two end-points, comprising:

control means; and

routing means for monitoring media component control signaling between the end-points, informing the control means about separate media components, recognizing the separate media components associated with a call between the two end-points, and applying a connection control issued by the control means to the separate media components.

According to the present invention, the routing means which may comprise call control means and media proxy means receive a media component control signaling message.

Moreover, the routing means may send a message to the control means and wait for a response from the control means. Further, the routing means which may comprise call control means and media proxy means may receive a message from the control means and send a modified component control signaling message from the call control means.

In addition, if the media component control signaling messages are routed via the media proxy means, the call control means may request report of media component related events from the media proxy means and the media proxy means may inform the call control means of the media component related events.

Furthermore, the multimedia stream may be routed via the media proxy means communicating with the call control means.

Moreover, the routing means may send a message from the call control means to the control means and wait for a response from the control means to the call control means. Furthermore, the media component control signaling message may describe opening, closing or modifying a media component.

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

LESON, Thomas, Johannes, Alois
TIEDTKE, BÜHLING, KINNE & PARTNER
GBR
Bavariaring 4
D-80336 München
ALLEMAGNE

PCT

WRITTEN OPINION

(PCT Rule 66)

Date of mailing *(day/month/year)*	17.07.2001
Applicant's or agent's file reference: WO 24044	**REPLY DUE** **within 2 month(s)** from the above date of mailing

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/EP99/04624	02/07/1999	

International Patent Classification (IPC) or both national classification and IPC

H04L29/06

Applicant

NOKIA NETWORKS OY et al.

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

I	☒	Basis of the opinion
II	☐	Priority
III	☐	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	☐	Lack of unity of invention
V	☐	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	☐	Certain document cited
VII	☒	Certain defects in the international application
VIII	☒	Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4. For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis. For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: 17.9.01 (WW 17.8.)

Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer / Examiner Cretaine, P Formalities officer (incl. extension of time limits) Barrio Baranano, A Telephone No. +49 89 2399 8621

I. Basis of the opinion

1. With regard to the **elements** of the international application (Replacement *sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*):

Description, pages:

1-13 as originally filed

Claims, No.:

1-24 as originally filed

Drawings, sheets:

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Re Item VII

Certain defects in the international application

1. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the document EP-A-0 909 064 is not mentioned in the description, nor is this document identified therein. The Applicant is requested to point out and discuss in his reply letter any difference which distinguishes the subject-matter of the present application from the disclosure of the prior art disclosed in D1.

2. The features of the claims are not provided with reference signs (corresponding to the network structure of figure 1) placed in parentheses (Rule 6.2(b) PCT).

3. Independent claims 1 and 13 are not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

   If, however, the applicant is of the opinion that the two-part form would be inappropriate, then reasons therefor should be provided in the letter of reply. In addition, the applicant should ensure that it is clear from the description which features of the subject-matter of claims 1 and 13 are already known in combination from the document D1 (see the PCT Guidelines, III-2.3a).

Re Item VIII

Certain observations on the international application

1. It is clear from the description on page 1, lines 5-6 and on page 2, lines 6 to 16, that the technical context of the H.323 Recommendation for multimedia communications is essential to the definition of the invention.

   Since independent claims 1 and 13 do not contain a reference to this ITU umbrella

recommendation they do not meet the requirement following from Article 6 PCT taken in combination with Rule 6.3(b) PCT that any independent claim must contain all the technical features essential to the definition of the invention.

2. Independent claim 13 does not meet the requirements of Article 6 PCT with respect to clarity because it is not clear if the control means are part of the claimed network or not.

PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF RECEIPT OF RECORD COPY

(PCT Rule 24.2(a))

To:

TRÖSCH, Hans-Ludwig
Tiedtke-Bühling-Kinne
Bavariaring 4
D-80336 München
ALLEMAGNE

Date of mailing (day/month/year)	IMPORTANT NOTIFICATION
25 August 1999 (25.08.99)	
Applicant's or agent's file reference	**International application No.**
WO 24044	PCT/EP99/04624

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

NOKIA TELECOMMUNICATIONS OY (for all designated States except US)
WALLENIUS, Jukka (for US)

International filing date	:	02 July 1999 (02.07.99)
Priority date(s) claimed	:	
Date of receipt of the record copy by the International Bureau	:	11 August 1999 (11.08.99)
List of designated Offices	:	

AP :GH,GM,KE,LS,MW,SD,SL,SZ,UG,ZW
EA :AM,AZ,BY,KG,KZ,MD,RU,TJ,TM
EP :AT,BE,CH,CY,DE,DK,ES,FI,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE
OA :BF,BJ,CF,CG,CI,CM,GA,GN,GW,ML,MR,NE,SN,TD,TG
National :AE,AL,AM,AT,AU,AZ,BA,BB,BG,BR,BY,CA,CH,CN,CU,CZ,DE,DK,EE,ES,FI,GB,GD,GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KP,KR,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MN,MW,MX,NO,NZ,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,UA,UG,US,UZ,VN,YU,ZA,ZW

ATTENTION

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

- [X] time limits for entry into the national phase
- [ ] confirmation of precautionary designations
- [ ] requirements regarding priority documents

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer:

Céline Faust

Telephone No. (41-22) 338.83.38

INFORMATION ON TIME LIMITS FOR ENTERING THE NATIONAL PHASE

The applicant is reminded that the "national phase" must be entered before each of the designated Offices indicated in the Notification of Receipt of Record Copy (Form PCT/IB/301) by paying national fees and furnishing translations, as prescribed by the applicable national laws.

The time limit for performing these procedural acts is **20 MONTHS** from the priority date or, for those designated States which the applicant elects in a demand for international preliminary examination or in a later election, **30 MONTHS** from the priority date, provided that the election is made before the expiration of 19 months from the priority date. Some designated (or elected) Offices have fixed time limits which expire even later than 20 or 30 months from the priority date. In other Offices an extension of time or grace period, in some cases upon payment of an additional fee, is available.

In addition to these procedural acts, the applicant may also have to comply with other special requirements applicable in certain Offices. **It is the applicant's responsibility** to ensure that the necessary steps to enter the national phase are taken in a timely fashion. Most designated Offices do not issue reminders to applicants in connection with the entry into the national phase.

For detailed information about the procedural acts to be performed to enter the national phase before each designated Office, the applicable time limits and possible extensions of time or grace periods, and any other requirements, see the relevant Chapters of Volume II of the PCT Applicant's Guide. Information about the requirements for filing a demand for international preliminary examination is set out in Chapter IX of Volume I of the PCT Applicant's Guide.

GR and ES became bound by PCT Chapter II on 7 September 1996 and 6 September 1997, respectively, and may, therefore, be elected in a demand or a later election filed on or after 7 September 1996 and 6 September 1997, respectively, regardless of the filing date of the international application. (See second paragraph above.)

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

CONFIRMATION OF PRECAUTIONARY DESIGNATIONS

This notification lists only specific designations made under Rule 4.9(a) in the request. It is important to check that these designations are correct. Errors in designations can be corrected where precautionary designations have been made under Rule 4.9(b). The applicant is hereby reminded that any precautionary designations may be confirmed according to Rule 4.9(c) before the expiration of 15 months from the priority date. If it is not confirmed, it will automatically be regarded as withdrawn by the applicant. There will be no reminder and no invitation. Confirmation of a designation consists of the filing of a notice specifying the designated State concerned (with an indication of the kind of protection or treatment desired) and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.

REQUIREMENTS REGARDING PRIORITY DOCUMENTS

For applicants who have not yet complied with the requirements regarding priority documents, the following is recalled.

Where the priority of an earlier national, regional or international application is claimed, the applicant must submit a copy of the said earlier application, certified by the authority with which it was filed ("the priority document") to the receiving Office (which will transmit it to the International Bureau) or directly to the International Bureau, before the expiration of 16 months from the priority date, provided that any such priority document may still be submitted to the International Bureau before that date of international publication of the international application, in which case that document will be considered to have been received by the International Bureau on the last day of the 16-month time limit (Rule 17.1(a)).

Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request must be made before the expiration of the 16-month time limit and may be subjected by the receiving Office to the payment of a fee (Rule 17.1(b)).

If the priority document concerned is not submitted to the International Bureau or if the request to the receiving Office to prepare and transmit the priority document has not been made (and the corresponding fee, if any, paid) within the applicable time limit indicated under the preceding paragraphs, any designated State may disregard the priority claim, provided that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity to furnish the priority document within a time limit which is reasonable under the circumstances.

Where several priorities are claimed, the priority date to be considered for the purposes of computing the 16-month time limit is the filing date of the earliest application whose priority is claimed.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
WO 24044		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/EP 99/ 04624	02/07/1999	
Applicant		
NOKIA NETWORKS OY		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

   a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

   [ ] the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

   b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

   [ ] contained in the international application in written form.

   [ ] filed together with the international application in computer readable form.

   [ ] furnished subsequently to this Authority in written form.

   [ ] furnished subsequently to this Authority in computer readble form.

   [ ] the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   [ ] the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. [ ] **Certain claims were found unsearchable** (See Box I).

3. [ ] **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

   [X] the text is approved as submitted by the applicant.

   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No. 1

   [X] as suggested by the applicant.

   [ ] None of the figures.

   [ ] because the applicant failed to suggest a figure.

   [ ] because this figure better characterizes the invention.

INTERNATIONAL SEARCH REPORT

Intern .nal Application No
PCT/EP 99/04624

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L29/06 H04Q3/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H04L H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 909 064 A (KOKUSAI DENSHIN DENWA CO LTD) 14 April 1999 (1999-04-14) page 3, line 31 -page 4, line 51; figures 1A,1B	1,13
A	US 5 717 859 A (YUNOKI HIDEO) 10 February 1998 (1998-02-10) column 3, line 8 - line 50	1,13

-/—

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

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Date of the actual completion of the international search	Date of mailing of the international search report
24 February 2000	08/03/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Ströbeck, A

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INTERNATIONAL SEARCH REPORT

Intern tal Application No
PCT/EP 99/04624

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passagee	Relevant to claim No.
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